

stored in the ATM cell headers (of cells associated with the logical buffers 26) separately to the SAR interface devices, in accordance with the particular interface protocols thereof.

IN THE CLAIMS

Please amend Claim 1 as follows:

1. A method of generating digital traffic for use in testing a multi-port communication device, said method comprising the steps of:

generating a reference digital traffic pattern; and

generating a plurality of traffic streams from the reference digital traffic pattern,

wherein the plurality of traffic streams are used for loading respective input ports of the communication device to mimic real digital traffic input conditions for the communication device.

Please amend Claim 2 as follows:

2. The method as claimed in claim 1, further including the step of introducing a plurality of phase delays amongst the plurality of traffic streams.

Please amend Claim 3 as follows:

3. The method according to claim 2, wherein the communication device effects statistical multiplexing amongst the plurality of traffic streams.

Please amend Claim 4 as follows:

4. The method according to claim 3, wherein the plurality of traffic streams are continuous digital data streams.

Please amend Claim 5 as follows:

5. The method according to claim 4, wherein the plurality of traffic streams are ATM cell streams.

Please amend Claim 6 as follows:

6. A method of loading a multi-port communication device with digital traffic, the method comprising the steps of:
generating a digital traffic pattern; and
providing a plurality of streams of the digital traffic pattern to input ports of the communication device, the plurality of streams having a plurality of phase delays therebetween.

Please amend Claim 7 as follows:

7. The method according to claim 6, wherein the communication device effects statistical multiplexing of the plurality of streams.

Please amend Claim 8 as follows:

8. A method of loading a multi-port communication device with digital traffic, said method comprising the steps of:

generating a plurality of digital traffic streams having identical data content; and
providing the plurality of digital traffic streams with a plurality of phase delays
therebetween to input ports of the communication device.

Please amend Claim 9 as follows:

9. The method according to claim 8, wherein the communication device effects statistical multiplexing of the plurality of digital traffic streams.

Please amend Claim 10 as follows:

10. A method of operating a digital traffic replicating device for use in testing a multi-port communication device, comprising the steps of:

receiving an input digital traffic stream; and

generating a plurality of output digital traffic streams from the input digital traffic stream,

wherein a phase delay is introduced to at least one of the plurality of output digital traffic streams.

Please amend Claim 11 as follows:

11. The method according to claim 10, wherein the plurality of output digital traffic streams have traffic patterns which are replicas of the input digital traffic stream.

Please amend Claim 12 as follows:

12. The method according to claim 11, wherein the communication device effects statistical multiplexing of the plurality of output digital traffic streams.

Please amend Claim 13 as follows:

13. Apparatus for generating digital traffic for use in testing a multi-port communication device, said apparatus comprising:

a reference pattern generator generating a reference pattern defining a digital traffic pattern; and

a traffic stream replicating device generating a plurality of traffic streams from the reference pattern,

wherein the plurality of traffic streams load respective input ports of the communication device to mimic real digital traffic input conditions for the communication device.

Please amend Claim 14 as follows:

14. The apparatus as claimed in claim 13, further including means for introducing respective phase delays amongst the plurality of traffic streams.

Please amend Claim 15 as follows:

15. The apparatus according to claim 14, wherein the communication device effects statistical multiplexing of the plurality of traffic streams.

Please amend Claim 16 as follows:

16. The apparatus according to claim 15, wherein the plurality of traffic streams are continuous digital data streams.

Please amend Claim 17 as follows:

17. The apparatus according to claim 16, wherein the plurality of traffic streams are ATM cell streams.

Please amend Claim 18 as follows:

18. An apparatus for loading a multi-port communication device with digital traffic, the apparatus comprising:

a traffic generator generating input digital traffic; and

means for providing a plurality of streams of the input digital traffic to input ports of the communication device, the plurality of streams provided with phase delays therebetween to mimic real digital traffic input conditions for the communication device.

Please amend Claim 19 as follows:

19. The apparatus according to claim 18, wherein the communication device effects statistical multiplexing of the plurality of streams.

Please amend Claim 20 as follows:

20. Apparatus for loading a multi-port communication device with digital traffic, the apparatus comprising:

means for generating a plurality of digital traffic streams having identical data content;
and

means for providing the plurality of digital traffic streams to input ports of the communication device with a phase delay introduced to at least one of the plurality of digital traffic streams to mimic real digital traffic input conditions for the communication device.

Please amend Claim 21 as follows:

21. The apparatus according to claim 20, wherein the communication device effects statistical multiplexing of the plurality of digital traffic streams.

Please amend Claim 22 as follows:

22. A digital data stream replicating device, comprising:
an input port for receiving an input continuous digital data stream comprising input data blocks at an input transmission rate;
broadcast means for replicating the input continuous digital data stream into N streams of replicated continuous digital data streams;
N output ports for transmitting the plurality of replicated continuous digital data streams at output transmission rates, each output transmission rate at least equal to the input transmission rate; and
delay means for introducing a delay for each replicated continuous digital data stream of the plurality of replicated digital data streams with respect to the input continuous digital data stream to mimic real digital traffic input conditions for the communication device.

Please amend Claim 23 as follows:

23. The device according to claim 22, the device further including means for introducing idle data blocks into a replicated continuous digital data stream of the plurality of replicated continuous digital data streams for transmission through an output port of the N output ports when an output transmission rate associated with the output port is greater than the input transmission rate.

Please amend Claim 24 as follows:

24. The device according to claim 22, wherein the delay means comprises:
a memory having N first-in first-out (FIFO) logical buffers established therein, each logical buffer being associated with one digital data stream of the plurality of replicated continuous digital data streams,
wherein when a logical buffer of the N FIFO logical buffers is full, data blocks associated with the logical buffer are forwarded to an output port of the N output ports associated the logical buffer, such that a delay provided to a digital data stream transmitted through the output port correlates to a length of the logical buffer.

Please amend Claim 25 as follows:

25. The device according to claim 23, wherein the delay means comprises:
a memory having N first-in first-out (FIFO) logical buffers established therein, each logical buffer being associated with one digital data stream of the plurality of replicated continuous digital data streams,

wherein when a logical buffer of the N FIFO logical buffers is full, data blocks associated with the logical buffer are forwarded to an output port of the N output ports associated the logical buffer, such that a delay provided to a digital data stream transmitted through the output port correlates to a length of the logical buffer.

Please amend Claim 26 as follows:

26. The device according to claim 25, wherein:

the delay means for each replicated continuous output digital data stream forwards data blocks associated with its logical buffer at the output transmission rate of the corresponding output port; and

the delay provided to the replicated continuous digital data stream correlates to a transmission rate of the corresponding output port.

Please amend Claim 27 as follows:

27. The device according to claim 24, wherein each of the logical buffers is established by copying the input data blocks into a physical buffer organized in the memory, each of the logical buffers corresponding to a different physical buffer.

Please amend Claim 28 as follows:

28. The device according to claim 26, each of the logical buffers is established by copying the input data blocks into a physical buffer organized in the memory, each of the logical buffers corresponding to a different physical buffer.

Please amend Claim 29 as follows:

29. The device according to claim 24, wherein the logical buffers are established by copying each input data block into one physical buffer and maintaining a separate pointer to the physical buffer for each logical buffer.

Please amend Claim 30 as follows:

30. The device according to claim 26, wherein the logical buffers are established by copying each input data block into one physical buffer and maintaining a separate pointer to the physical buffer for each logical buffer.

Please amend Claim 31 as follows:

31. The device according to claim 24, wherein the input and transmitted digital data streams are ATM cell streams.

Please amend Claim 32 as follows:

32. The device according to claim 26, wherein the input and transmitted digital data streams are ATM cell streams.

Please amend Claim 33 as follows:

33. A digital data stream replicating device for mimicking real data traffic input patterns for a communication device, comprising:

an input port for receiving a continuous digital data stream comprising input data blocks
at an input transmission rate;

a memory;

N output ports, each having an output transmission rate equal to the input transmission rate;

processing means, connected between the input port and the N output ports, for establishing N first-in first-out logical buffers in the memory and associating each of the input data blocks of the continuous digital data stream with each one of the N logical buffers, each logical buffer being associated with only one of the output ports; and

scheduling means for forwarding data blocks associated with a given logical buffer through its corresponding output port when the given logical buffer is full.

Please amend Claim 34 as follows:

34. The device according to claim 33, wherein each logical buffer has a length selected to achieve a relative delay between the input digital data stream and an output digital data stream replicated by the logical buffer for its corresponding output port.

Please amend Claim 35 as follows:

35. The device according to claim 34, wherein each of the logical buffers is established by copying the input data blocks into a physical buffer organized in the memory, each of the logical buffers corresponding to a different physical buffer.

Please amend Claim 36 as follows:

36. The device according to claim 34, wherein the logical buffers are established by copying each input data block into one physical buffer and maintaining a separate pointer to the physical buffer for each logical buffer.

Please amend Claim 38 as follows:

38. A digital data stream replicating device for mimicking real data traffic input patterns for a communication device, comprising:

an input port for receiving a continuous digital data stream comprising input data blocks
at an input transmission rate;

a memory;

N output ports, each having an output transmission rate at least equal to the input
transmission rate;

processing means, connected between the input port and the N output ports, for
establishing N first-in first-out logical buffers in the memory and associating each
of the input data blocks of the continuous digital data stream with each one of the
N logical buffers, each logical buffer being associated with only one of the output
ports; and

scheduling means for forwarding data blocks associated with a given logical buffer
through its corresponding output port when the given logical buffer is full.

Please amend Claim 39 as follows:

39. The device according to claim 38, the device further including means for introducing empty data blocks into an output digital data stream replicated by the logical buffer for its corresponding output port when the output transmission rate of its corresponding output port is greater than the input transmission rate.

Please amend Claim 40 as follows:

40. The device according to claim 39, wherein, for each logical buffer, its length and the output transmission rate of its corresponding output port are selected to achieve a relative delay between the input digital data stream and an output digital data stream replicated by the logical buffer for its corresponding output port.

Please amend Claim 41 as follows:

41. The device according to claim 39, wherein each of the logical buffers is established by copying the input data blocks into a physical buffer organized in the memory, each of the logical buffers corresponding to a different physical buffer.

Please amend Claim 42 as follows:

42. The device according to claim 39, wherein the logical buffers are established by copying each input data block into one physical buffer and maintaining a separate pointer to the physical buffer for each logical buffer.

Please amend Claim 44 as follows:

44. A performance testing device, comprising:
- a traffic generator for generating a continuous digital data stream;
 - an input port for receiving the continuous digital data stream at an input transmission rate;
 - broadcast means for replicating the input digital data stream N times;
 - N output ports for transmitting each such replicated digital data stream through a separate output port at an output transmission rate at least equal to the input transmission rate; and
 - delay means for introducing a relative delay for each said transmitted digital data stream with respect to the input digital data stream.

Please amend Claim 45 as follows:

45. A performance testing device, comprising:
- a traffic generator for generating a continuous digital data stream;
 - an input port for receiving the continuous digital data stream comprising input data blocks at an input transmission rate;
 - a memory;
 - N output ports, each having an output transmission rate at least equal to the input transmission rate;
 - processing means, connected between the input port and the N output ports, for establishing N first-in first-out logical buffers in the memory and associating each of the input data blocks of the continuous digital data stream with each one of the